

Nonbank Lending

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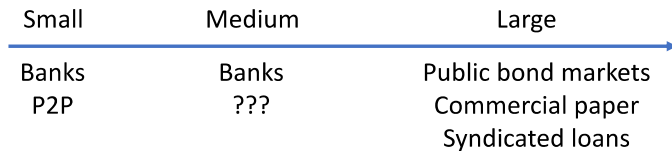
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Motivation

- To what extent do nonbank financial intermediaries supply credit to U.S. firms?
- Little systematic evidence on direct lending by nonbanks to small and medium-sized businesses

Motivation – Cont.

- To what extent do nonbank financial intermediaries supply credit to U.S. firms?
- Little systematic evidence on direct lending by nonbanks to small and medium-sized businesses



- **Large** firms rely on their reputation to borrow at arm's length (Diamond 1991).
- **Small** firms are too small to justify intensive screening and monitoring and contract terms are not observable.
- **Medium** firms have the right size for screening/monitoring intensive direct lending. If publicly listed, contracts can be obtained from SEC filings.

PE and Hedge Funds as Bankers to Midsize Firms

The New Business Banker: A Private-Equity Firm

Firms are lending more where traditional banks won't--and sometimes competing with them, too



The headquarters of Carlyle Group, one of the private-equity firms pushing into lending. PHOTO: SHAWN THEW/EPA/SHUTTERSTOCK

By Miriam Gottfried and Rachel Louise Ensign

Updated Aug. 12, 2018 4:51 p.m. ET

Private-equity firms have long been some of the biggest owners of companies. Now they are vying to become some of their biggest lenders.

Fueled by an influx of cash from yield-hungry investors, firms historically devoted to buyouts are now financing deals banks won't. Nonbanks—many private-equity firms—held more than half a trillion dollars worth of loans to midsize companies at the end of 2017, up from roughly \$300 billion in 2012, according to estimates by private-equity firm Ares Management LP.

PE and Hedge Funds as Bankers to Midsize Firms

DealB%k

WITH FOUNDER
ANDREW ROSS SORKIN

MERGERS & ACQUISITIONS

INVESTMENT BANKING

PRIVATE EQUITY

HEDGE FUNDS

I.P.O./OFFER

Bank Said No? Hedge Funds Fill a Void in Lending

BY AZAM AHMED JUNE 9, 2011 8:55 PM 26

Hedge fund managers have been called plenty of names.

Now, they can add another: local banker.

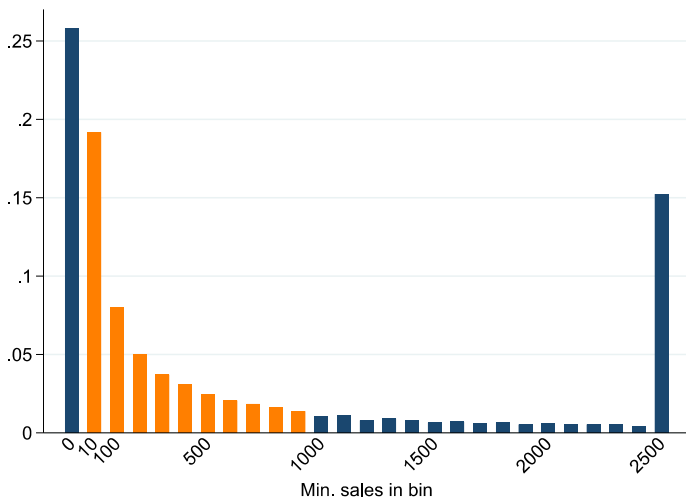
When Rentech, a clean energy business in Los Angeles, was rejected by its long-time banker last year,

it asked a hedge fund for money instead. "You have to take what's available at the time," said D. Hunt Ramsbottom, chief executive of Rentech, which has since borrowed \$100 million in this unconventional way.



J. Emilio Flores for The New York TimesD. Hunt Ramsbottom, head of Rentech, which turned to hedge funds for loans after a bank rejected it.

Who are Middle Market Firms?



- Firms with sales between \$10 million and \$1 billion;
- Middle two quartiles of sales in Compustat.

Questions

1. How common is direct lending by nonbank financial intermediaries (**nonbanks**) to middle market firms?
2. What types of financial institutions lend **directly** to middle market firms?
3. What determines the choice of lender type?
4. How do lending terms vary across lender types?
 - Do lending terms vary controlling for firm characteristics?

What can these answers tell us about theories of financial intermediation?

Related Literature

1. Institutional investors in the **syndicated loan** market

- Ivashina and Sun (2011), Jiang et al (2010), Massoud et al (2011), Nadauld and Weisbach (2012), Lim et al (2014), Irani and Meisenzahl (2017), Irani et al (2018).
- **Banks** are still arranging loans, screening, and monitoring borrowers.

2. **Non-bank private debt** financing

- Denis and Mihov (2003) study the choice of incremental debt financing: bank loan vs. non-bank private debt vs. public debt.
- Carey, Post, and Sharpe (1998) study syndicated loans arranged by banks versus finance companies.
- Agarwal and Meneghetti (2011) study 42 firms that borrow from 13 hedge funds.

2. Are **bank loans special**?

- James (1987), Lummer and McConnell (1989), Billett et al (1995), Billett et al (2006), and many others...

Preview of the Results

1. 32% of loans taken out by middle market firms are from nonbank lenders.
2. Discontinuity at zero EBITDA in the probability of borrowing from a nonbank: 28% → 60%.
3. Firms are more likely to turn to a nonbank lender if local banks are poorly capitalized or local banking market is more competitive.
4. Controlling for observable firm and loan characteristics, nonbank lenders charge about 200 basis points higher interest rates.
5. Loans from nonbank lenders are 12-48% less likely to include financial covenants, but more likely to include warrants.
6. No differences in subsequent operating performance or stock returns between bank and nonbank borrowers.
7. Significantly higher announcement returns for nonbank loans than for bank loans.

Data

- Random sample of 750 US publicly-traded **middle market** firms (excluding financial firms and utilities).
 - Sales between \$10 million and \$1 billion.
- **Book leverage** > 5% at some point during 2010-2015.
- Use Capital IQ to extract list of all credit agreements entered into during the **2010-2015** period.
- DealScan covers 52% of bank and **20% of nonbank loans**.

Data

Lender Types

1. **Business Development Companies (BDCs)**
 - Hercules Capital, Main Street Capital
2. **Finance companies (FCOs)**
 - GE Capital, MidCap Financial, Oxford Finance
3. **Bank-affiliated finance companies (Bank FCOs)**
 - Wells Fargo Capital Finance, Banc of America Leasing & Capital, RBS Asset Finance
4. **Hedge funds**
 - GSO Capital Partners, Silver Point Capital, Whitebox Advisors
5. **Investment banks**
 - BMO Capital Markets, Jefferies Finance, Morgan Stanley Senior Funding
6. **Insurance**
 - Lincoln National Life, Metropolitan Life, Prudential
7. **Investment managers**
 - Benefit Street Partners, Dominion Capital, Sapinda Asia
8. **PE/VC**
 - Partners for Growth, Synthesis Capital, Tennenbaum Capital Partners

Data

➤ Contract terms

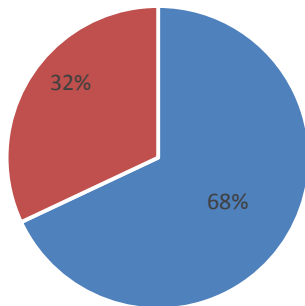
- Size
- Maturity
- Interest rate: fixed vs. floating, spread, initial value, performance pricing
- Covenants
- Fees: upfront, annual
- Security, seniority
- Warrants

➤ Original TTM financials from Capital IQ.

- Exclude individual, nonfinancial, and government lenders.

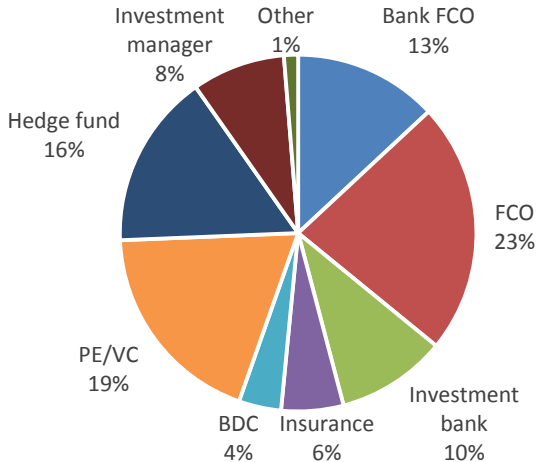
Lender Types

Bank vs. Nonbank



■ Bank ■ Nonbank

Nonbank Lender Types



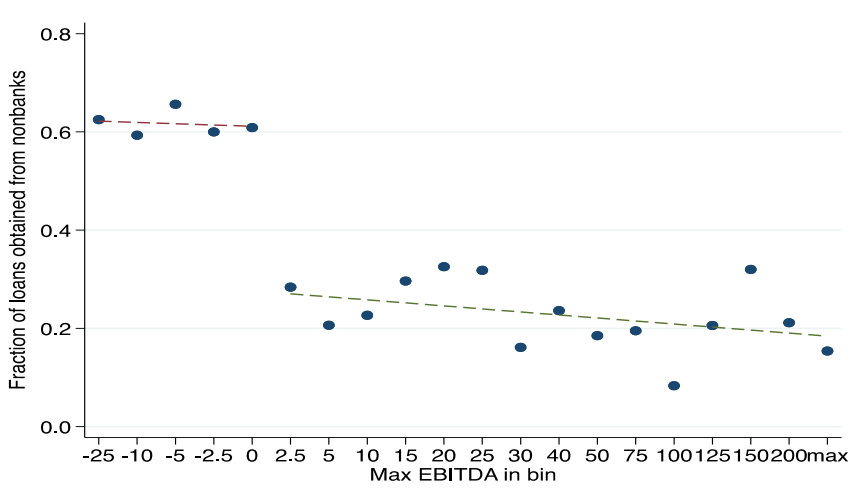
➤ Excluding individual, nonfinancial, and government lenders.

Probability of Borrowing from a Nonbank Lender

	(1)	(2)	(3)	(4)	(5)
Ln(Assets)	-0.00 (0.31)	-0.01 (0.62)	0.01 (0.65)	-0.02 (0.35)	-0.03 (0.43)
EBITDA	-0.00 (1.43)	-0.00 (1.45)	-0.00 (1.20)	-0.00 (0.51)	-0.00 (0.25)
EBITDA < 0	0.33*** (7.48)	0.35*** (8.26)	0.28*** (6.06)	0.23*** (2.63)	0.19* (1.90)
Leverage	0.33*** (4.53)	0.38*** (5.78)	0.33*** (4.61)	0.30** (2.17)	0.23 (1.48)
Volatility			0.21*** (3.48)		0.21* (1.79)
Past return			-0.11*** (3.00)		-0.08 (1.37)
Industry effects	✓	✓	✓		
Borrower effects				✓	✓
N	1171	1171	1090	1171	1090

- Linear probability model with year FEs
- Industry FEs = Fama-French 12.
- Additional controls: Cash, research expense, PP&E, log firm age, receivables, inventories, current ratio, market-to-book, sales growth.

EBITDA and Probability of Borrowing from a Nonbank



Local Banking Markets and Borrowing from Nonbanks

	(1)	(2)	(3)	(8)
Bank leverage	-0.073*** (3.25)	-0.059*** (2.87)	-0.074*** (3.47)	-0.058*** (2.64)
Deposit concentration	-0.369*** (2.79)	-0.264* (1.93)	-0.292** (2.17)	-0.302** (2.37)
Ln(Deposits)				0.009 (0.74)
Ln(Per capita income)				0.043 (0.71)
Personal income growth				-0.226 (0.50)
Unemployment				0.008 (0.91)
Industry effects		✓	✓	✓
<i>N</i>	1,200	1,200	1,200	1,200

Linear probability model with year + Fama-French 12 industry FEs.

Errors adjusted for clustering at the country level.

Explanatory variables are standardized.

Borrowers are more likely to turn to nonbank lenders when

1. local banks are poorly capitalized,
2. local banking market is more competitive.

Determinants of Borrowing from Different Lender Types

	FCO	Investment bank	Asset managers	Insurance
	(1)	(2)	(3)	(4)
Ln(Assets)	1.26 (1.62)	2.30*** (2.93)	0.86 (1.08)	1.19 (0.37)
EBITDA	1.00* (1.75)	1.00 (0.77)	0.99** (2.47)	1.00 (0.11)
EBITDA < 0	2.08** (2.19)	3.82** (2.10)	4.84*** (5.14)	6.51* (1.92)
Leverage	5.35*** (2.74)	4.17 (1.49)	12.22*** (4.26)	1.29 (0.15)
Research expense	1.78 (0.42)	0.00 (1.56)	3.18 (1.12)	0.00 (1.33)
PP&E	0.67 (0.53)	0.80 (0.21)	0.52 (0.87)	10.71 (1.59)
Cash	1.38 (0.26)	5.13 (0.99)	0.11** (2.19)	0.03 (1.34)
Non-zero obs in cat.	119	34	153	21

- Relative risk ratios from multinomial logit regressions.
- Bank loans are base outcome.
- Year + Fama-French 12 industry FEs

Interest Rate

	(1)	(2)	(3)	(4)	(5)
Nonbank	444.37*** (13.83)	345.00*** (13.01)	216.39*** (8.32)	208.29*** (6.59)	195.90*** (7.70)
Ln(Assets)		-54.88*** (7.02)	-37.26*** (2.62)	-28.98* (1.95)	-42.13*** (3.20)
Profitability		-240.33*** (3.44)	-224.46*** (3.53)	-193.82*** (3.04)	-186.94*** (2.73)
Leverage		178.06*** (4.33)	153.19*** (4.56)	151.32*** (4.46)	124.75*** (3.48)
Research expense		-30.76 (0.34)	-93.88 (1.14)	-66.77 (0.80)	-37.37 (0.45)
PP&E		-85.89 (1.63)	-84.80* (1.92)	-93.19** (2.07)	-85.34** (2.17)
Cash		-107.84 (1.44)	-114.23 (1.56)	-109.57 (1.46)	-159.62** (2.46)
Receivables		-260.39** (2.48)	-258.75** (2.34)	-264.14** (2.34)	-280.10*** (2.62)
Inventory		-38.87 (0.59)	-56.03 (1.00)	-101.36* (1.73)	-35.31 (0.69)
Ln(Firm age)		-7.84 (0.66)	-5.27 (0.44)	-8.43 (0.71)	-12.07 (1.07)
N	1145	1089	1052	902	981

➤ Year + Fama-French 12 industry FEs.

Interest Rate

	(1)	(2)	(3)	(4)	(5)
Nonbank	444.37*** (13.83)	345.00*** (13.01)	216.39*** (8.32)	208.29*** (6.59)	195.90*** (7.70)
Market-to-book					-4.22 (0.67)
Sales growth					24.66 (0.91)
Volatility					135.72*** (3.44)
Past return					-67.48*** (3.55)
<i>N</i>	1145	1089	1052	902	981

- Year + Fama-French 12 industry FEs.
- Columns 3-5 also include loan characteristics

Interest Rate — Different Types of Lenders

	(6)	(7)
Bank FCO	-61.29** (2.28)	-65.97*** (2.66)
FCO	273.99*** (6.89)	250.64*** (6.46)
Investment Bank	194.42*** (5.53)	195.30*** (5.28)
PE/VC/BDC	433.72*** (11.80)	438.04*** (11.10)
Hedge fund/IM	455.08*** (8.99)	433.69*** (9.08)
Insurance	91.59 (1.57)	85.37 (1.62)
<i>N</i>	1047	976

- Year + Fama-French 12 industry FEs.
- Findings consistent with funding cost differences.

Non-Price Terms

	Ln(Amount)		Maturity		Seniority		Security	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank FCO	-1.01*** (3.40)	-1.04*** (2.67)	0.50 (0.99)	0.57 (1.37)	-0.11* (1.73)	-0.12** (2.06)	0.10*** (2.75)	0.08* (1.96)
FCO	-0.88*** (4.50)	-0.26** (2.03)	-0.40* (1.69)	0.04 (0.19)	-0.13*** (2.80)	-0.13*** (2.74)	0.07** (2.03)	0.02 (0.58)
Investment bank	0.88*** (2.86)	0.23 (1.30)	0.81*** (2.68)	0.47* (1.80)	-0.13** (2.04)	-0.15** (2.21)	0.02 (0.37)	0.03 (0.50)
PE/VC/BDC	-1.90*** (8.76)	-0.43*** (2.76)	-0.67*** (2.69)	0.44 (1.55)	-0.41*** (5.61)	-0.43*** (5.70)	-0.06 (1.18)	-0.15** (2.55)
Hedge fund/IM	-1.77*** (6.97)	-0.44** (2.48)	-1.01*** (3.55)	0.06 (0.27)	-0.37*** (4.17)	-0.38*** (4.88)	-0.21*** (2.71)	-0.28*** (4.22)
Insurance	0.12 (0.38)	-0.62** (2.55)	5.85*** (8.06)	5.48*** (9.59)	-0.06 (1.10)	-0.06 (0.99)	-0.25** (2.11)	-0.21* (1.92)
Ln(Assets)		0.86*** (20.14)		0.29*** (4.37)		0.02** (2.03)		-0.04*** (2.86)
Profitability		0.16 (0.65)		1.21*** (2.79)		-0.10 (1.26)		0.03 (0.31)
Leverage		0.61*** (3.41)		-0.09 (0.29)		-0.10* (1.68)		0.07 (1.07)
Additional controls		✓		✓		✓		✓
Year effects	✓	✓	✓	✓	✓	✓	✓	✓
Industry effects		✓		✓		✓		✓
N	1083	1083	1069	1069	1084	1084	1058	1058

Non-Price Terms – Cont.

	Financial covenants		Performance pricing		Warrants		Convertible	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bank FCO	-0.22** (2.39)	-0.23** (2.36)	-0.08 (0.85)	-0.01 (0.06)	0.02 (0.77)	0.05* (1.72)	-0.00 (0.77)	-0.01 (1.13)
FCO	-0.20*** (3.27)	-0.12* (1.91)	-0.38*** (11.86)	-0.26*** (6.06)	0.11** (2.50)	0.07* (1.96)	0.04* (1.70)	0.03 (1.29)
Investment bank	-0.11 (1.50)	-0.14** (2.12)	-0.16* (1.89)	-0.19** (2.25)	0.04 (1.07)	0.05 (1.26)	0.12** (2.04)	0.12** (2.04)
PE/VC/BDC	-0.46*** (6.84)	-0.35*** (5.12)	-0.43*** (15.26)	-0.31*** (6.58)	0.39*** (6.02)	0.27*** (4.18)	0.21*** (3.91)	0.19*** (3.35)
Hedge fund/IM	-0.61*** (10.73)	-0.48*** (8.07)	-0.33*** (3.85)	-0.30*** (2.90)	0.25*** (4.04)	0.17*** (2.68)	0.28*** (6.09)	0.24*** (5.26)
Insurance	-0.06 (0.87)	-0.10 (1.50)	-0.47*** (9.67)	-0.64*** (9.30)	0.03 (0.61)	0.04 (1.31)	-0.00 (0.71)	0.01 (0.79)
Ln(Assets)		0.03** (2.19)		0.07*** (4.50)		-0.01 (1.45)		-0.00 (0.41)
Profitability		0.20** (2.17)		0.05 (0.44)		-0.26*** (3.49)		-0.04 (0.56)
Leverage		0.07 (1.11)		-0.23*** (2.66)		-0.04 (0.84)		0.02 (0.63)
Additional controls		✓		✓		✓		✓
Year effects	✓	✓	✓	✓	✓	✓	✓	✓
Industry effects		✓		✓		✓		✓
N	1085	1085	839	839	1084	1084	1084	1084

Interpretation of the Results: Matching between Lenders and Borrowers

1. Lender's asset-liability maturity match

- Lenders with **less stable funding** (hedge funds) lend at **shorter maturities** than lenders with stable funding (insurance companies)
- Lend to firms for which short-term debt is likely to provide discipline (Diamond, 1991)

2. Screening vs. Monitoring

- For **unprofitable** firms ex-ante screening likely to be more important than ex-post monitoring → borrow from lenders that are better at screening
 - GSO Capital looks at about 1,000 deals every year and completes fewer than 5 percent of those
- Less reliance on **financial covenants**
- Upfront fees and **prepayment penalties** to recoup upfront screening costs
- Lenders that rely on ex-ante screening cannot **hold up** borrowers ex-post (Rajan, 1992) → Charge higher interest rate up front
- **Distance** less costly when lenders rely on ex-ante screening than on ex-post monitoring

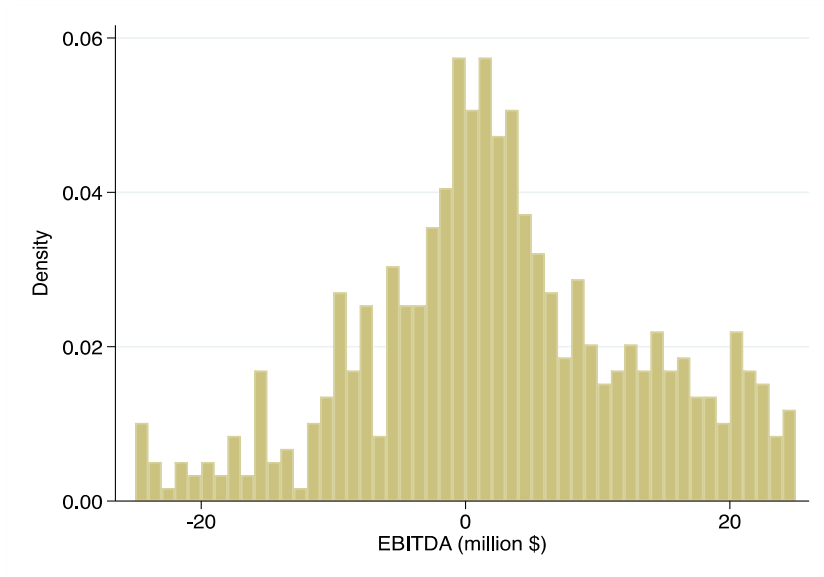
3. Expertise in maximizing recovery value

Fuzzy RDD

Banks have multiple reasons not to lend to borrowers with negative cash flow

- Negative cash flow loans are automatically considered non-pass rated and have to be added to the criticized-classified report as “substandard” loans (OCC Handbook, 2001)
- Non-pass rated loans require additional loan loss reserves and may invite regulator scrutiny
- Not specialized in collecting on illiquid collateral
- Banks cannot hold equity obtained in bankruptcy for more than two years (Gilson, 1990)

Fuzzy RDD



Fuzzy RDD

	Bandwidth	Left obs.	Right obs.	1 st stage	2 nd stage
Initial interest rate	32.48	194	346	-0.30*** (-4.03)	564.79*** (4.10)
Ln(Amount)	22.06	193	318	-0.29*** (-3.53)	-0.43 (-0.69)
Maturity	22.88	187	317	-0.31*** (-3.72)	-2.39* (-1.73)
Financial covenants	23.52	195	326	-0.29*** (-3.59)	-0.58** (-2.22)
Performance pricing	24.50	105	256	-0.23*** (-2.67)	-0.10 (-0.20)
Warrants	22.76	192	321	-0.30*** (-3.60)	0.42* (1.86)
Convertible	22.48	192	320	-0.29*** (-3.62)	0.10 (0.49)
Bankrupt _{t+3}	20.25	168	275	-0.25*** (-2.79)	0.04 (0.14)
Δ Profitability _{t+3}	19.29	139	218	-0.22** (-2.13)	0.38 (1.20)

- Coverage error-rate-optimal (CER) bandwidth selector of Calonico et al (2016).
- Controls: total assets, leverage, R&D, PP&E, cash, receivables, inventory, firm age, volatility and past returns, the year and industry FE.

Bankruptcy Within 3 Years

	(1)	(2)	(3)	(4)
Nonbank	0.041** (2.37)	0.032* (1.88)	0.026 (1.50)	0.012 (0.70)
Ln(Assets)		0.004 (0.80)	-0.000 (0.02)	0.010 (1.16)
Profitability		-0.102*** (2.61)	-0.112** (2.26)	-0.061 (1.14)
Leverage			0.054 (1.46)	0.044 (1.13)
Volatility				0.094** (2.54)
Past return				-0.084*** (3.46)
Constant	0.009 (0.47)	-0.022 (0.76)	0.016 (0.27)	-0.088 (1.08)
<i>N</i>	1165	1118	1109	1029

- Linear probability model
- Year + Fama-French 12 industry FEs.
- Controls: PP&E, cash, research expense, receivables, inventories, log firm age, market-to-book, sales growth.

Controlling for firm characteristics, similar bankruptcy rates for bank and nonbank borrowers

Operating Performance

	(1) [$t, t+1$]	(2) [$t+1, t+2$]	(3) [$t+2, t+3$]	(4) [$t, t+1$]	(5) [$t+1, t+2$]	(6) [$t+2, t+3$]
Nonbank	-0.02* (-1.96)	-0.01 (-1.44)	0.00 (0.06)	-0.01 (-0.71)	-0.01 (-1.27)	-0.00 (-0.22)
Ln(Assets)	0.01 (1.63)	0.01 (1.50)	-0.00 (-0.94)	0.00 (0.83)	0.00 (0.73)	-0.00 (-1.01)
Profitability _t	-0.51*** (-10.15)	-0.10** (-2.03)	-0.03 (-0.52)	-0.50*** (-8.60)	-0.10 (-1.61)	-0.05 (-0.86)
Leverage	0.05* (1.87)	0.05** (2.05)	-0.01 (-0.31)	0.07** (2.57)	0.04 (1.49)	-0.01 (-0.36)
Volatility				-0.07*** (-3.08)	-0.02 (-0.69)	-0.00 (-0.04)
Past return				0.02 (0.97)	-0.03** (-2.37)	0.03 (1.43)
Observations	1129	1045	880	1051	972	813

- Year + Fama-French 12 industry FEs.
- Controls: PP&E, cash, research expense, receivables, inventories, log firm age, market-to-book, sales growth.

Similar operating performance by bank and nonbank borrowers

Announcement Returns

	[Orig., Announce.]			[Announce., Announce.]		
	(1)	(2)	(3)	(4)	(5)	(6)
Nonbank	0.033*** (3.38)	0.034*** (3.28)	0.029** (2.30)	0.015** (2.04)	0.010 (1.25)	0.013 (1.22)
Ln(Assets)		0.001 (0.23)	0.001 (0.37)		0.001 (0.56)	0.002 (0.96)
EBITDA < 0		-0.015 (0.76)	-0.023 (1.14)		0.013 (1.18)	0.011 (0.88)
Leverage		0.026 (1.42)	0.026 (1.42)		0.012 (1.14)	0.011 (1.03)
Financial covenants		-0.012				0.008 (0.90)
Warrants			0.014 (0.63)			0.010 (0.81)
Maturity			-0.001 (0.54)			-0.001 (0.75)
Constant	0.002 (0.68)	-0.008 (0.36)	0.008 (0.32)	0.003 (1.19)	-0.008 (0.57)	-0.015 (0.77)
N	324	317	312	324	317	312

- Cumulative market-adjusted returns.
- Filing must be within five calendar days of origination and stock price must be larger than \$1.

Conclusion

- Novel systematic evidence on the identity of nonbank lenders, characteristics of firms borrowing from different types of lenders, and loan terms offered by different lenders.
- **Unprofitable firms** significantly more likely to borrow from nonbank lenders.
- Contracting terms—interest rate exposure, maturity—broadly consistent with differences in **lenders' funding structures**.
- Nonbank lenders charge significantly **higher interest rates**.
- Nonbank loans less likely to include financial covenants ...
- ... but align incentives through warrants and appear to engage in ex-ante screening.
- Firms located in areas where local banks are **poorly capitalized** and in more **competitive markets** are more likely to turn to nonbank lenders.